NPort Server Pro

Hardware Installation Guide

for DE-303/308

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Hardware Installation Guide for DE-303/308

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1
Introduction

Welcome to Moxa NPort Server Pro, an Industrial Serial Device Server that greatly enhances the ability of a Windows 95/98/Me/NT/2000/XP and Linux host to control multiple serial port devices over a TCP/IP based Ethernet network.

This chapter is an introduction to NPort Server Pro and includes the following:

- Features
- Product Specifications
- Package Checklist
- Front/Rear Panel Views

NPort Server Pro provides a data communications solution for connecting Windows and Linux hosts to multiple asynchronous RS-232 serial ports through a TCP/IP network. Each model has 8 (DE-308) or 16 (DE-303) asynchronous RS-232 serial port connections, and one 10/100 Mbps Ethernet connection, allowing any device that supports primarily the asynchronous communications protocol to attach to a network. NPort Server Pro works like an add-on multi-port serial board to the Windows server, but with one major advantage—the TCP/IP network. Since the Windows host communicates with the COM ports on NPort Server Pro over a TCP/IP network, you are able to control asynchronous serial devices from virtually anywhere in the world.

Although it connects through the virtual link of the Ethernet, the ports on NPort Server Pro are recognized as Real COM ports by the Windows operating system. NPort Server Pro provides the basic transmit/receive data functions, as well as RTS, CTS, DTR, DSR, and DCD control signals. Moreover, the NPort Server Pro driver is fully compatible with the Windows standard COM driver.

NPort Server Pro can be used with your existing applications that support serial communication. It also comes with a utility program providing a simple step-by-step installation procedure, and a maintenance wizard that gives you easy access to your asynchronous devices.

Features

- ❑ Auto-detecting 10/100 Mbps Ethernet interface
- ❑ 8/16 ports for the RS-232 serial interface
- ❑ Built-in Ethernet and TCP/IP protocols
- ❑ Supports Windows Real COM and Linux fixed/real tty drivers
- ❑ Automatic network connection recovery
- ❑ Easy installation in a 19" Rackmount

Product Specifications

Hardware

Processor	Intel i960CA RISC processor
I/O controller	16C954 or compatible (automatic hardware flow control)
Memory	1 MB (8 ports), 2 MB (16 ports)
Connector type	RJ45

Interface

LAN	100BaseTx (10/100 Mbps)
Serial	RS-232
No. of ports	8 or 16
Signals	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND

Performance

Speed	50 bps – 230.4 Kbps
Max. No. of ports	256 (per Windows NT host) 128 (per Windows 95/98 host)

Configuration

Parity	None, even, odd, space, mark
Data bits	5, 6, 7, 8
Stop bits	1, 1.5, 2

OS Support

Windows XP, Windows 2000, Windows NT, Windows 95/98/Me, UnixWare SVR4.2, UnixWare7 SVR5, SCO Open Server, SCO UNIX, Linux fixed tty for 2.0.x, 2.2.x, Linux real tty for 2.0.36 and above, 2.2.x, 2.4.x (Intel x86 running TCP/IP)

Power and Environment

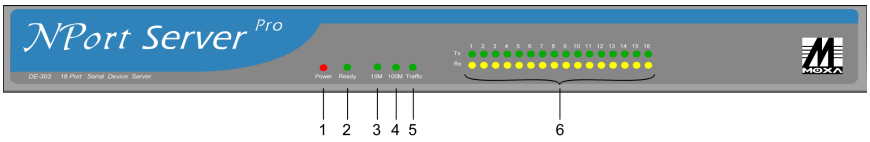
Power requirements	90 – 260V, 47 – 63 Hz, 60W
Operating Temp.	0 – 55℃
Operating Humidity	5 – 95% RH
Rackmount	19-in Standard rack
Dimensions	440 × 190 × 44 mm (W × D × H)
Surge Protection	15 KV ESD
Optical Isolation (Optional)	2 KV
Magnetic Isolation	1.5 KV for Ethernet
Regulatory approvals	FCC, CE, UL, C/UL

Package Checklist

- ❑ One 8 or 16 port NPort Server Pro
- ❑ NPort Server Pro Hardware Installation Guide
- ❑ NPort Family Software Installation Guide
- ❑ Driver and utility programs on CD
- ❑ Power cable
- ❑ CN20040 (RJ45 to male DB25 cable)
- ❑ Cross-over Ethernet cable
- ❑ Rackmount kit, including 2 L-shaped metal plates and 8 screws
- ❑ RJ45 loopback tester
- ❑ PComm Pro CD
- ❑ 4 rubber pads

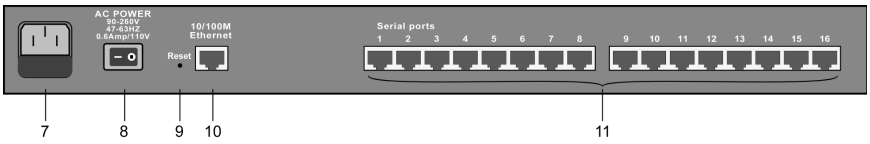
Front/Rear Panel Views

Front Panel View



1. Power LED
2. Ready LED
3. 10M network speed LED
4. 100M network speed LED
5. Traffic LED
6. TX/RX LEDs

Rear Panel View



7. Power input ⊖—◉—⊕
8. AC Power switch
9. Reset button—press continuously for
   a. 3 sec to erase password
10. 10/100BaseTx Ethernet port
11. RJ45 serial ports for RS-232 interface

Note: The model shown is DE-303. Model DE-308 has 8 ports.

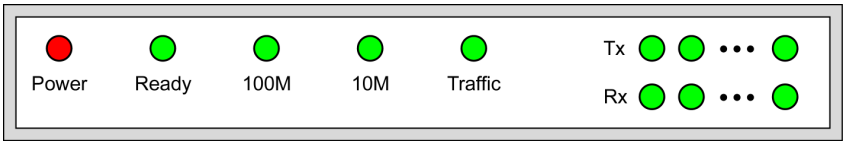
2

Setting Up NPort Server Pro

This chapter explains the basic steps involved in setting up NPort Server Pro, and includes the following sections:

- LED Indicators
- Locating NPort Server Pro
  - Desktop
  - Rackmount
- Connecting to the Network
- Connecting the Power
- Connecting Asynchronous Serial Devices

LED Indicators



LED	COLOR	Description
Power	Red	Indicates that NPort Server Pro is turned on, and power is being supplied to the server.
Ready	Green	Steady on indicates that NPort Server Pro is running without problem. Flashing indicates that the NPort Pro Manager Locate Server function has located the server.
	Blinking	NPort is requesting an IP address from the DHCP or BootP server. After receiving the IP, the LED will stop blinking.
100M	Green	Steady on indicates that NPort Server Pro's Ethernet connection is running at 100 Mbps.
10M	Green	Steady on indicates that NPort Server Pro's Ethernet connection is running at 10 Mbps.
Traffic	Green	Blinking indicates data are being received from the Ethernet Interface.
Tx	Green	Blinking indicates that data are being sent out through the serial port.
Rx	Orange	Blinking indicates that data are being received through the serial port.

Note: The number of Tx/Rx LEDs depends on the model you use. For DE-303, there are 16 Tx/Rx LEDs. For DE-308, there are 8 Tx/Rx LEDs.

Locating NPort Server Pro

There are two placement options available. NPort Server Pro can be placed on a desktop, or attached to a 19-inch rackmount.

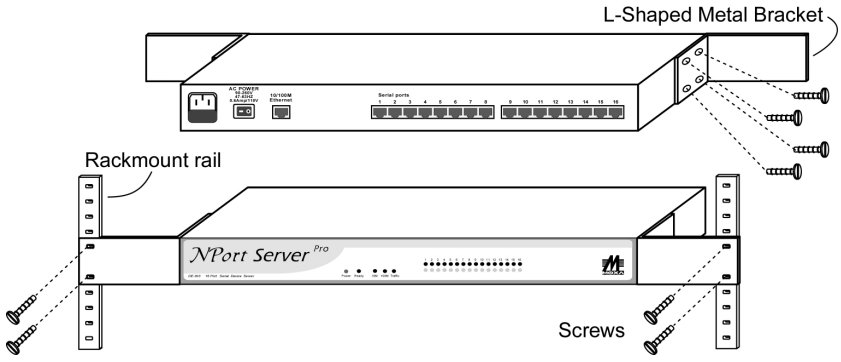
Desktop

This option involves placing NPort Server Pro on a clean, flat, well-ventilated desktop. In this case, you should stick the four rubber pads to the bottom of the server, and we recommend leaving sufficient room between NPort Server Pro and neighboring equipment to create clearance for air to circulate.

Note: Please remember that it is not wise to put anything on top of NPort Server Pro, since this could damage the internal components.

Rackmount

NPort Server Pro can also be mounted on a 19-inch standard rackmount. First use four screws to attach the L-shaped brackets to the server. Next, use two screws on each side to attach the server to the rackmount, as shown below.



Connecting to the Network

There are two ways to use the 10/100BaseT Ethernet jack that is located on NPort Server Pro's back panel.

For many of the applications using NPort Server Pro, you will simply plug one end of your Ethernet cable into the 10/100BaseT jack, and the other end into the hub connected to your network. In this case, use a regular *straight-through* Ethernet cable.

In some cases, such as when configuring drivers and software, you will find it convenient to hook NPort Server Pro directly to your computer's Ethernet card. To do this you will need to use a *cross-over* cable, such as the one supplied with your server.

Connecting the Power

After connecting NPort Server Pro to your network, you should take the following steps to connect the power cable.

NPort Server Pro's power supply is designed to support 90 – 260 VAC, making it possible for you to use the server regardless of your AC power supply's voltage.

Note: It is strongly recommended that NPort Server Pro be connected to the network before turning on the power.

1. Connect the power cord to NPort Server Pro's rear panel.
2. Plug the other end of the power cord into an electrical outlet.
3. Turn the on/off switch to the I–position.
4. Check the power LED on the front panel to verify that the server is receiving power.

Connecting Asynchronous Serial Devices

You may use the RJ-45 to female DB-25 cable included with NPort Server Pro to connect serial devices to the server. Plug the RJ-45 connector into one of the serial port jacks on the server's rear panel, and then connect the DB25 connector to the serial device.

Refer to Chapter 3 for details of NPort Server Pro's RJ-45 pinouts to make your own cable.

Note: You can also use the RJ-45 to male DB25 cable to connect the server to a modem. See Chapter 3 for pinout details to make your own modem cable.

3

Cable Pinouts and Wiring

In this chapter, we list the cables that you may use with NPort Server Pro, and include information needed to make your own cable.

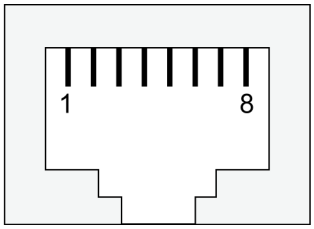
The following topics are covered:

- 10/100BaseT Port Pinouts
- Asynchronous Port Pinouts
- CN20040 — RJ45 to Male DB25 RS-232 Cable Pinouts
- CN20060 — RJ45 to Male DB9 RS-232 Cable Pinouts

10/100BaseT Port Pinouts

Listed below are the pinouts for the 10BaseT port on NPort Server Pro.

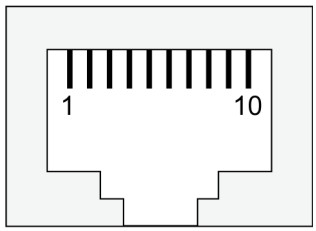
8-Pin	Description
1	Tx+
2	Tx-
3	Rx+
6	Rx-



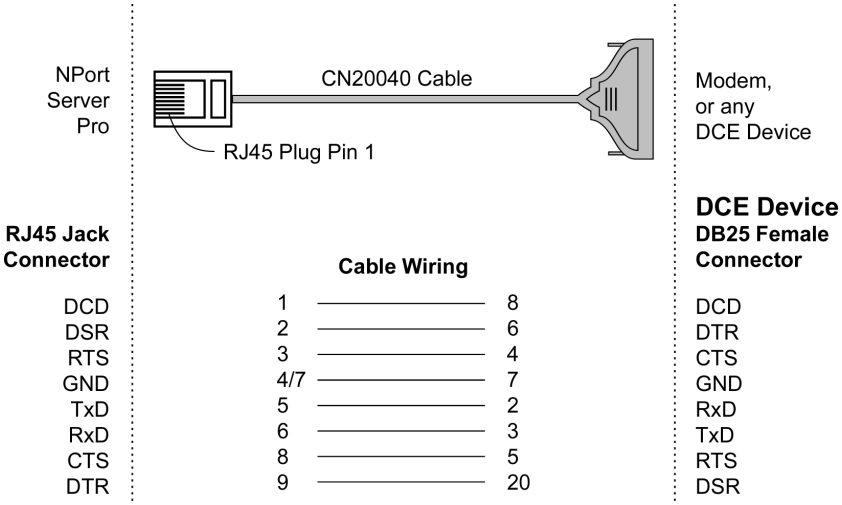
Serial Port Pinouts

Listed below are the pinouts for NPort Server Pro's serial ports.

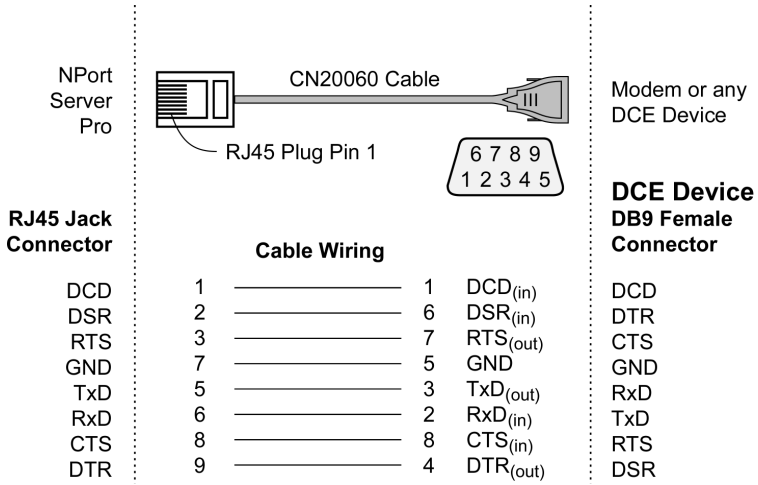
10-Pin	Description
1	DCD
2	DSR
3	RTS
4	GND
5	TxD
6	RxD
7	GnD
8	CTS
9	DTR
10	-----



CN20040 — RJ45 to Male DB25 RS-232 Cable Wiring



CN20060 — RJ45 to Male DB9 RS-232 Cable Wiring



Problem Report Form

NPort Server Pro

Customer name:	
Company:	
Tel:	Fax:
E-mail:	Date:

1. **Moxa Product:** ☐ DE-308 (8 RS-232 ports)
   ☐ DE-303 (16 RS-232 ports)
2. **Serial Number:** _____
3. **Operation Mode:** ☐ Host Based Mode ☐ Raw (TCP Server)
   ☐ Raw (TCP Client) ☐ Raw (UDP)
4. **NPort Pro Firmware Version:** _____
5. **NPort Pro Manager Version:** _____
6. **PC Host:** Make _____ Model _____
7. **CPU:** Speed _____ MHz Make _____ Model ____
8. **Ethernet Card :** ☐ ISA Card Make: _____
   ☐ PCI Card Make: _____
9. **Your Installation Type:** ☐ Single Host ☐ Multi Host ☐ Custom
10. **Problem Description:** Please describe the symptoms as clearly as possible, including any error messages you see. We may need to follow your description to reproduce the symptoms, so please give a complete description of the problem.

_____

_____

_____

_____

_____

Revision History

Document Edition	Revision Date	Revision Details
2nd	December 1, 2002	1. Moxa FTP site changed to Moxa website (Moxa Internet Services page). 2. Added a description of what it means when the Ready LED is blinking (p. 2-2)

RETURN PROCEDURE

For product repair, exchange, or refund, the customer must:

- Provide evidence of original purchase.
- Obtain a Product Return Agreement (PRA) from the sales representative or dealer.
- Fill out the Problem Report Form (PRF). Include as much detail as possible for a shorter product repair time.
- Carefully pack the product in an anti-static package, and send it, pre-paid, to the dealer.
- The PRA should be visible on the outside of the package, and include a description of the problem, along with the return address and telephone number of a technical contact.